

CLAIMS

That which is claimed is:

1. An article of footwear having an upper and a sole structure secured to the upper, the upper comprising a stratified material having at least a first layer and a second layer, the first layer forming an exterior of the upper, and the first layer being laser-etched to form a removed portion of the first layer that exposes the second layer.

2. The article of footwear recited in claim 1, wherein the first layer and the second layer have different properties.

3. The article of footwear recited in claim 2, wherein the different properties are selected from a group consisting of color, abrasion-resistance, durability, air-permeability, flexibility, and stretch-resistance.

4. The article of footwear recited in claim 1, wherein the removed portion of the first layer is an incision in the first layer.

5. The article of footwear recited in claim 1, wherein the removed portion of the first layer is an area of the first layer that is removed.

6. The article of footwear recited in claim 1, wherein the stratified material includes a third layer, the second layer being positioned between the first layer and the third layer.

7. The article of footwear recited in claim 6, wherein the second layer is laser-etched to form a removed portion of the second layer that exposes the third layer, the removed portion of the second layer being at least partially coextensive with the removed portion of the first layer.

8. The article of footwear recited in claim 7, wherein the removed portion of the first layer and the removed portion of the second layer is an incision that extends through the first layer and the second layer.

9. The article of footwear recited in claim 7, wherein the removed portion of the first layer and the removed portion of the second layer are coextensive areas of the first layer and the second layer that are removed.

10. The article of footwear recited in claim 9, wherein edges of the removed portion of the first layer are spaced from edges of the removed portion of the second layer to form a stepped configuration.

11. The article of footwear recited in claim 9, wherein edges of the removed portion of the first layer coincide with edges of the removed portion of the second layer.

12. A method for manufacturing an article of footwear, the method including steps of:
providing a stratified material having at least two layers that are secured together, the layers including a first layer and a second layer;
forming an incision in the stratified material with a laser, the incision extending through the first layer to expose the second layer; and
incorporating the stratified material into an upper of the article of footwear.

13. The method recited in claim 12, wherein the step of forming the incision includes segregating a first portion of the first layer from a second portion of the first layer.

14. The method recited in claim 13, further including a step of removing the first portion of the first layer to expose an underlying portion of the second layer.

15. The method recited in claim 12, wherein the step of providing the stratified material includes selecting the stratified material to have a third layer, the second layer being positioned between the first layer and the third layer.

16. The method recited in claim 15, wherein the step of forming the incision includes extending the incision through the second layer to also expose the third layer.

17. The method recited in claim 16, wherein the step of forming the incision includes segregating a first portion of the first and second layers from a second portion of the first and second layers.

18. The method recited in claim 17, further including a step of removing the first portion of the first and second layers to expose an underlying portion of the third layer.

19. The method recited in claim 15, wherein the step of forming the incision includes segregating a first portion of the first layer from a second portion of the first layer.

20. The method recited in claim 19, further including a step of removing the first portion of the first layer to expose an underlying portion of the second layer.

21. The method recited in claim 20, further including a step of forming another incision that extends only through the second layer to segregate a first portion of the second layer from a second portion of the second layer, and removing the first portion of the second layer to expose an underlying portion of the third layer.

22. The method recited in claim 12, wherein the step of providing the stratified material includes selecting the first layer and the second layer to have different properties.

23. The method recited in claim 22, wherein the step of providing the stratified material includes selecting the different properties to be from a group consisting of color, abrasion-resistance, durability, air-permeability, flexibility, and stretch-resistance.

24. The method recited in claim 12, further including a step of applying heat and pressure to the stratified material to bond the layers together.

25. A method for modifying properties of an upper for an article of footwear, the method comprising steps of:

providing a stratified material having at least two layers that are secured together, the layers including an exterior layer and an underlying layer, the exterior layer having a first property, and the underlying layer having a second property;

removing a first portion of the exterior layer with a laser such that a second portion of the exterior layer remains secured to the underlying layer and the stratified material exhibits:

the first property in areas where the second portion of the exterior layer remains secured to the underlying layer, and

the second property in areas where the first portion of the exterior layer is removed from the stratified material; and

incorporating the stratified material into an upper of the article of footwear.

26. The method recited in claim 25, wherein the first property and the second property are selected from a group consisting of color, abrasion-resistance, durability, air-permeability, flexibility, and stretch-resistance.

27. The method recited in claim 25, wherein the step of providing the stratified material includes selecting the stratified material to have a second underlying layer, the underlying layer being positioned between the exterior layer and the second underlying layer.

28. The method recited in claim 27, wherein the step of removing the first portion of the exterior layer includes removing a corresponding portion of the second layer to expose the second underlying layer and a third property of the second underlying layer:

29. The method recited in claim 25, further including a step of applying heat and pressure to the stratified material to bond the layers together.

30. A method for laser-etching, the method including steps of:
providing a stratified material having a first layer and a second layer that are secured together;
forming a first incision in the stratified material with a laser, the first incision extending through the first layer to expose the second layer, and the first incision forming a first portion of the first layer and a second portion of the first layer that are segregated by the first incision; and
removing the first portion of the first layer from the stratified material such that the second portion of the first layer remains secured to the second layer.

31. The method recited in claim 30, wherein the step of forming the first incision includes positioning the first portion of the first layer outside of boundaries of the first incision.

32. The method recited in claim 30, wherein the step of forming the first incision includes positioning the first portion of the first layer within boundaries of the first incision.

33. The method recited in claim 32, further including a step of forming a second incision in the stratified material with the laser, the second incision extending through the second layer to expose a third layer, and the second incision segregating two portions of the second layer.

34. The method recited in claim 33, further including a step of removing one of the two portions of the second layer.
35. The method recited in claim 33, wherein the step of forming the second incision includes positioning the second incision within boundaries of the first incision.
36. The method recited in claim 30, wherein the step of providing the stratified material includes selecting the first layer and the second layer to have different properties.
37. The method recited in claim 36, wherein the step of providing the stratified includes selecting the different properties to be from a group consisting of color, abrasion-resistance, durability, air-permeability, flexibility, and stretch-resistance.
38. The method recited in claim 30, further including a step of applying heat and pressure to the stratified material to bond the first layer and the second layer together.
39. A method for manufacturing an article of footwear, the method including steps of:
providing a stratified material having a first property at a surface of the stratified material
and a second property at an interior portion of the stratified material;
forming an incision in the stratified material with a laser, the incision extending through
the stratified material to expose the interior portion; and
incorporating the stratified material into an upper of the article of footwear.
40. The method recited in claim 39, wherein the step of providing includes selecting the stratified material to have at least a first layer and a second layer, the first layer forming the surface and the second layer forming the interior portion.

41. The method recited in claim 40, wherein the step of forming the incision includes segregating a first portion of the first layer from a second portion of the first layer.

42. The method recited in claim 41, further including a step of removing the first portion of the first layer to expose an underlying portion of the second layer.

43. The method recited in claim 42, further including a step of forming another incision that extends only through the second layer to segregate a first portion of the second layer from a second portion of the second layer, and removing the first portion of the second layer to expose an underlying portion of a third layer.

44. The method recited in claim 40, wherein the step of providing the stratified material includes selecting the first layer and the second layer to have different properties.